

WHAT IS CLAIMED IS:

1. A nucleic acid present in other than its natural environment, wherein said nucleic acid encodes an Stichodactylidaen chromoprotein or fluorescent mutant thereof
2. The nucleic acid according to Claim 1, wherein said nucleic acid is isolated.
3. A nucleic acid present in other than its natural environment, wherein said nucleic acid encodes fluorescent protein having an emission maximum ranging from about 580 to 660 nm.
4. The nucleic acid according to Claim 3, wherein said nucleic acid is isolated.
5. A nucleic acid having a sequence of residues that is substantially the same as or identical to a nucleotide sequence of at least 10 residues in length of SEQ ID NOS:01-14.
6. The nucleic acid according to Claim 5, wherein said nucleic acid has a sequence similarity of at least about 60% with a sequence of at least 10 residues in length selected from the group of sequences consisting of SEQ ID NOS: 01-14.
7. A fragment of the nucleic acid selected from the group consisting of:
 - (a) a nucleic acid that encodes an Stichodactylidaen chromoprotein or fluorescent mutant thereof;
 - (b) a nucleic acid that encodes fluorescent protein having an emission maximum ranging from about 580 to 660 nm; and
 - (c) a nucleic acid having a sequence of residues that is substantially the same as or identical to a nucleotide sequence of at least 10 residues in length of SEQ ID NOS:01-14.
8. An isolated nucleic acid or mimetic thereof that hybridizes under stringent conditions to a nucleic acid selected from the group consisting of:
 - (a) a nucleic acid that encodes an Stichodactylidaen chromoprotein or fluorescent mutant thereof;
 - (b) a nucleic acid that encodes fluorescent protein having an emission maximum ranging from about 580 to 660 nm; and
 - (c) a nucleic acid having a sequence of residues that is substantially the same as or identical to a nucleotide sequence of at least 10 residues in length of SEQ ID NOS:01-14;
or its complementary sequence.

9. A construct comprising a vector and a nucleic acid selected from the group consisting of:

(a) a nucleic acid that encodes an Stichodactylidae chromoprotein or fluorescent mutant thereof;

(b) a nucleic acid that encodes fluorescent protein having an emission maximum ranging from about 580 to 660 nm;

(c) a nucleic acid having a sequence of residues that is substantially the same as or identical to a nucleotide sequence of at least 10 residues in length of SEQ ID

NOS:01-14;

(d) a fragment of the above nucleic acids; and

(e) a nucleic acid or the complement thereof that hybridizes under stringent conditions to the above nucleic acids.

10. An expression cassette comprising:

(a) a transcriptional initiation region functional in an expression host;

(b) a nucleic acid selected from the group consisting of the nucleic acids of Claims 1 to 9; and

(c) and a transcriptional termination region functional in said expression host.

11. A cell, or the progeny thereof, comprising an expression cassette according to Claim 10 as part of an extrachromosomal element or integrated into the genome of a host cell as a result of introduction of said expression cassette into said host cell.

12. A method of producing an Anthozoan chromo and/or fluorescent protein, said method comprising:

growing a cell according to Claim 11, whereby said protein is expressed; and isolating said protein substantially free of other proteins.

13. A protein or fragment thereof encoded by a nucleic acid selected from the group consisting of Claims 1 to 9.

14. An antibody binding specifically to a protein according to Claim 13.

15. A transgenic cell or the progeny thereof comprising a transgene selected from the group consisting of a nucleic acids according to any of Claims 1 to 9.

16. A transgenic organism comprising a transgene selected from the group consisting of a nucleic acids according to any of Claims 1 to 9.

17. In an application that employs a chromo- or fluorescent protein, the improvement comprising:

employing a protein according to Claim 13.

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18. In an application that employs a nucleic acid encoding a chromo- or fluorescent protein, the improvement comprising:

employing a nucleic acid according to Claims 1 to 9.

10 19. A kit comprising a nucleic acid according to Claims 1 to 9 and instructions for using said nucleic acid.

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